# Oriental Box of Drawers

This project has 3 pages.
This is Page 1.
Go to Page 2.
Go to Page 3.

Woods- Teak and mahogany as shown, pick what you like.

Here's a different approach to designing a box. This "box" is really a structure of posts and rails joined with pinned or wedged mortises and tenons. All of the drawer sides are exposed within this structure, and the drawers are supported by it.

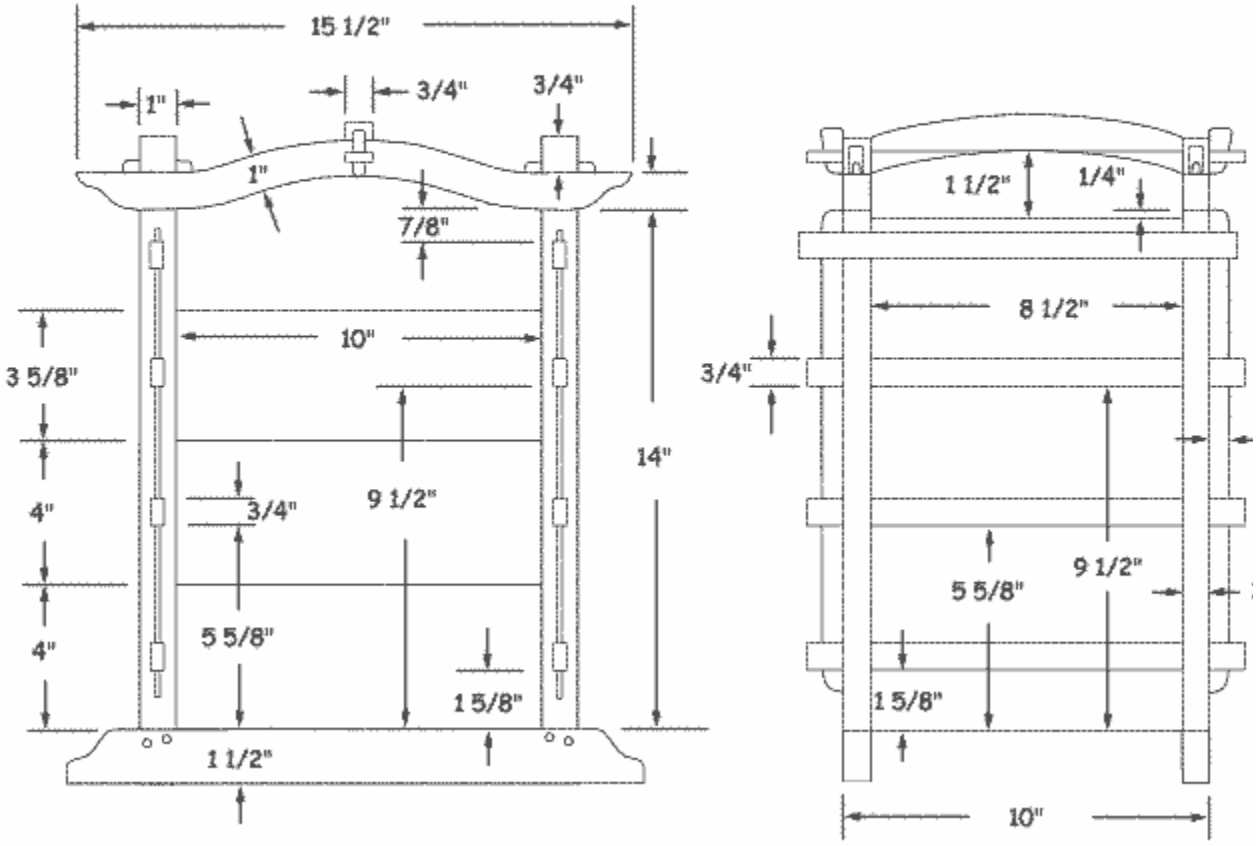
If you wish, you can eliminate the curved top rails on this box to simplify its construction. Replace them with straight rails of the same width, and adjust the widths of the front and rear drawer parts for the top drawer accordingly.

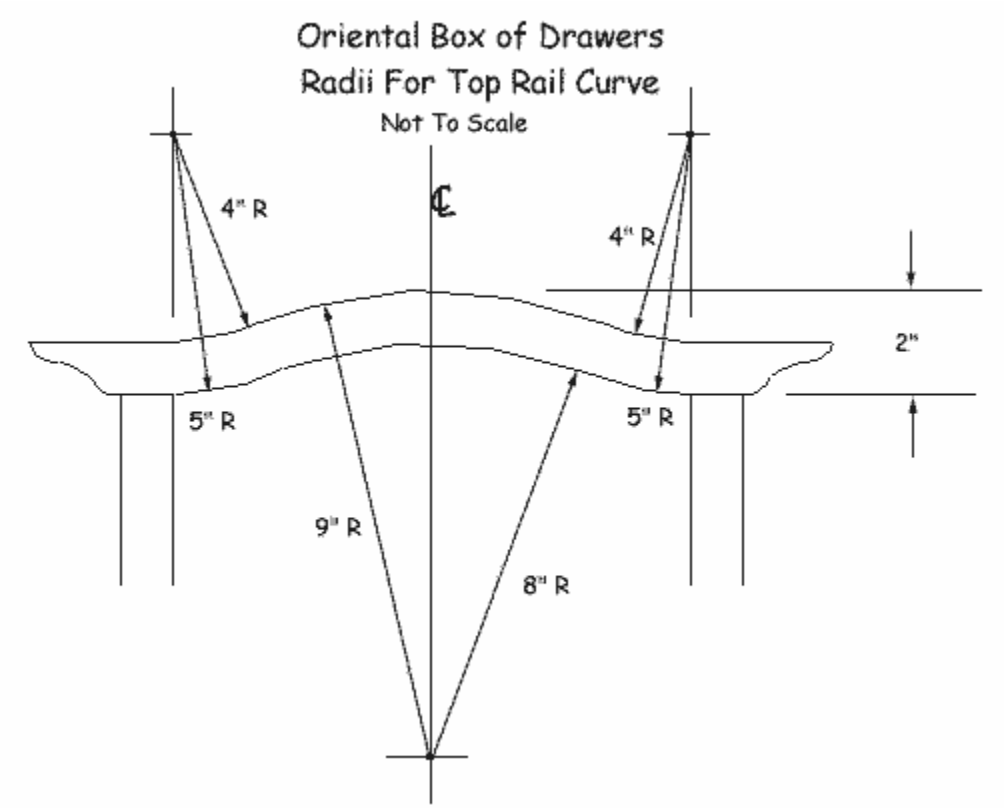
## Cut out list- Oriental Box of Drawers

Frame- all 3/4" thick
2- 1-1/2 x 16 bottom rails
2- 2 x 15-1/2 top rails
4- 1 x 16-3/4 posts
8- 1-3/8 x 12 side rails
2- 1 x 8-7/8 corner rails
1- 1-1/2 x 12 top center rail
14- 1/4 x 3/4 x 9 slats

Drawers
4- 3/4 x 4 x 10 fronts and backs, drawers 1 and 2
2- 3/4 x 3-5/8 x 10 front and back, drawer 3
2- 3/4 x 3-1/4 x 10 front and back, top drawer
4- 1/2 x 4 x 10 drawer sides
2- 1/2 x 3-5/8 x 10 drawer sides
2- 1/2 x 2-1/4 x 10 drawer sides
Note- the exact length of the drawer sides will depend on the joinery you choose for the drawers.

# Oriental Box of Drawers






## Resources for building an Oriental Box of Drawers

Band Saws | Chisels | Drill Presses | Hand Planes | Routers | Router Bits | Router Tables | Sanders | Sharpening Tools

TIP- GRAIN MATCHING

Note that the top rail and the two upper drawer fronts on this box were all cut from the same piece of wood, so that the grain matches between the three pieces. The same is true of the bottom rail and bottom drawer. Use this technique where you can, if you have stock that is wide enough to begin with. Matching grain shows an attention to detail that is found only in better woodworking.

Determine what stock you will use for your top rail (and top drawer rails, if you grain match), and draw a centerline on the stock. This centerline is important for locating the relationship of the top drawer curve to the top rail, as well as the location of the mortises in the top rail.

Use the drawing to make your own full sized template of the curved top rail, using a compass to draw the curves. Be sure to include the centerline on your template. Align the centerline of your template onto the centerline of your top rail stock, as shown in photo 1. Cut a hole in the template so you can see where the two centerlines match up as shown in the photo.

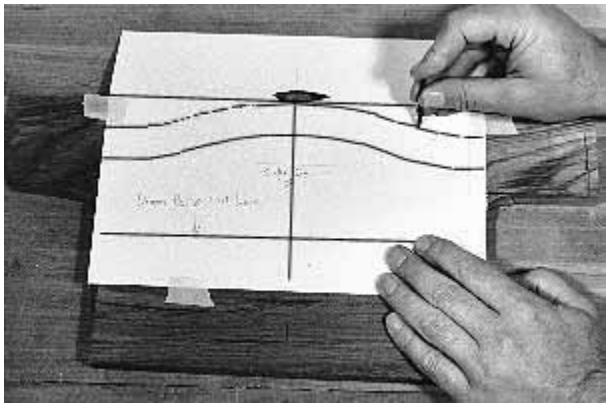


Photo 1- Align your tracing to a centerline that you drew on your parts, and transfer the curve to the wood with a sharp screw.

Use a sharp screw to puncture through the template onto the wood below, marking on it where the curve goes. Make these punctures exactly on the line of cut. Remove the template, and sketch along the punctures with a pencil. Use a ruler to continue the straight sections of the rail at the ends. Measure from the centerline to the ends to establish the length of the rail, and hand sketch in the curves on the rail ends.

**Delta 9" Band Saw**
Economical bench-top solution for the small shop.

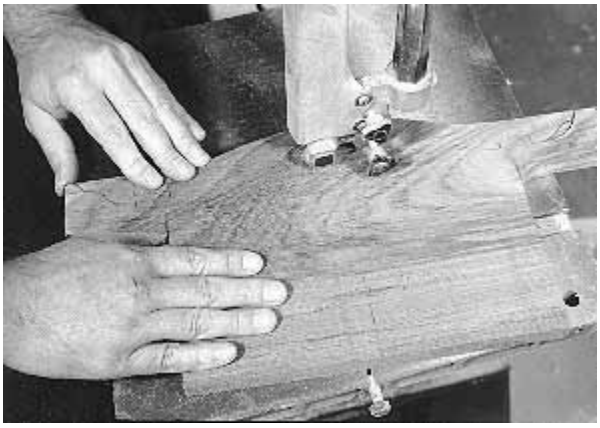



Photo 2- Cut out the curves on the band saw. Use a 1/4" blade, and follow the curve slowly and smoothly.

For bandsaws, click here.

Cut out the top rail on a band or scroll saw as in photo 2. Note that if you have grain matched the top rail and drawer face, the cut you make between them must be right on the line and must have a smooth curve. Go very slowly and watch the line of the cut carefully. Cut out the curves on the ends of the top and bottom rails too.

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Photo 3- A sharp, curved sole spoke shave will quickly clean up the marks left by the band saw. Use sandpaper if you prefer.

Use a curved sole spokeshave to smooth the inside curves on the top rail, as in photo 3. You can also use sandpaper with a curved sanding block, such as the back of the rubber sanding blocks commonly available. Remove as little wood as possible on the inside curve so that the shape still matches the curve of the top rail. Compare the two frequently so that you are sure they still match.

TIP- USING A CURVE SOLE SPOKESHAVE

A curve sole spokeshave is more difficult to use than a flat sole spokeshave. This is because it is harder to keep the sole on the wood through the cut, which is necessary for smooth operation. First, be sure the iron is very sharp. Secondly, use fairly hard pressure to push the tool down onto the wood during the cut. Apply more pressure to keep the tool onto the wood than you apply to move the tool across the wood.

Sanding Drum Set

Photo 4- Mount a small drum sander in the drill press to smooth and shape the curves on the ends of the rails. Be careful not to taper the curve onto the

For drill presses or drum sanders, click here.

**Delta 12" Drill Press**

Smooth the tight, inside curves on the ends of the rails with a small diameter drum sander mounted in the drill press as in photo 4. These tools are available at most hardware stores. This sander will remove the band saw marks and help smooth out the curve, but it leaves a rough surface. Smooth this out with a scraper, as in photo 5.

**Sandvik Scraper**

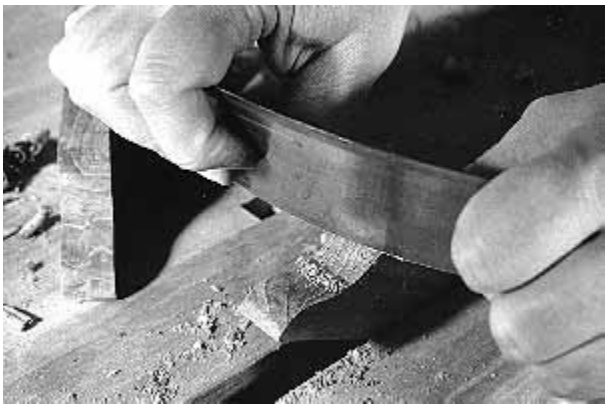

Photo 5- Clean up the marks left by the drum sander with a scraper. If the scraper is sharp, it will leave a smooth finish that won't need sanding. Otherwise, it will leave a surface that reuaires a minimum of sanding.

**Veritas Burnisher**
Makes putting a good burr on a scraper easy.

TIP- USING A SCRAPER

Putting a sharp burr onto a scraper so that it produces tissue shavings and a very smooth surface is hard to do. A simpler method is to simply file the scraper edge flat, smooth the edge on fine stones, and use it without a burr. Without a burr it won't work as well or leave as smooth a surface, but it will work well for cleaning up curved edges such as in this project. The finish it leaves will require a minimum of sanding with fine grits.

Having finished the curve work on the top and bottom rails, get out all the other frame parts, which, happily, are all straight and easy to make. You will put curves on the edges of the mid rails that pass between the front and rear frames, but not until after cutting the tenons on them at the bandsaw.

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TIP- USE A BLOCK PLANE TO SMOOTH SURFACES

When you saw out parts on the table saw, the remaining sawn edges must be cleaned up. You can do so with sandpaper, starting with rough grit and working through several grits to get a smooth surface. Or, you can clean up the rough edges in one operation with a block plane, as in photo 6. A sharp plane leaves a surface that requires no sanding. It will also remove planer knife marks just as quickly. Always plane with, not against, the grain direction to avoid tearout.

**Record Block Plane**
Well made, attractive tool.

**3 Stone Sharpening System**
Arkansas hard and soft and aluminum oxide coarse. All you need.

Photo 6- Clean up sawn edges or planer knife marks on straight parts with sharp block plane. This is one place where hand tool skills will really help you, because in one or two quick swipes you can create a smooth surface that needs no sanding, avoiding a lot of sanding drudgery.

For hand planes, click here.
For sharpening tools, click here.

**Honing Guide**

Next cut all of the mortises and tenons for the frame components, following the instructions given in the article on this site titled Mortise and Tenon Joinery. Note that all the mid rails that pass between the front and rear frames have through tenons except the two mid rails at

Makes sharpening chisels and plane irons a snap.

the top corners. These have short stub tenons that are only 3/16" long. Cut the mortises for these stub tenons into curved top rails before cutting the post mortises in these rails. Make the mortises in the bottom rails 1-1/8" deep, and the tenons to fit them 1" long.

Note that you must locate the tenons on the mid rails so that the inside edge on each protrudes ¼" beyond the inside of the vertical frame posts. The drawers fit onto the rails along these surfaces with grooves (see photo 9). After cutting the tenons, shape the outer edges of the mid rails with gradual curves. First sketch the curve onto the parts with a pencil, but be sure that you don't reduce the tenon shoulder dimension so that the edge falls below the edge of the top rail or post that the mid rail intersects. A power sander is handy for shaping the curve, as in photo 7, or shape it with a spoke shave or block plane. Use a flat sole spokeshave to shape outer curves such as these.

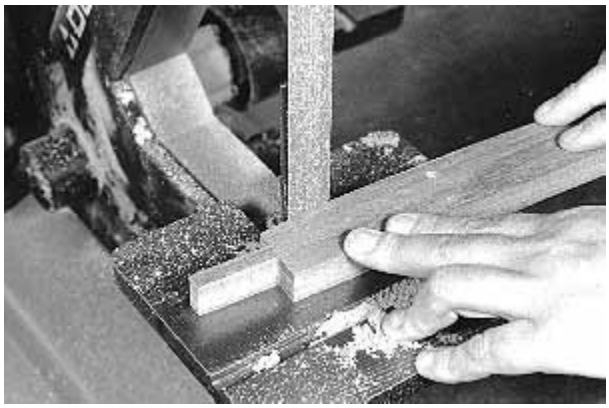

Photo 7- A strap or disk sander is very handy for shaping outside curves on parts such as the side rails. Clean up the sanding marks with a scraper, or hand sanding.

For sanders, click here.

Make the box top out of slats that fit into a curved groove cut along the inside edge of both curved top rails. To make this curved groove, set up on the router table with a point location fence and featherboard as shown in photo 8. The point location fence is simply a thin piece of wood with a rounded end clamped to the table as shown. Put a 1/4" straight flute bit in the router, and raise it 3/16" above the table. Set the end of the fence at 3/8" from the bit. Clamp a feather board onto the other side of the bit as shown, to apply pressure to the part during the cut and keep it solidly against the fence.

**Straight Flute Bit Set**
3/16, 1/4, 3/8, 1/2" sizes

**Straight Flute Bits**
Individual bits in various sizes

**Porter Cable 1-3/4 HP Lever Release 690 Router**
The PC 690 line routers are standard woodshop workhorses.

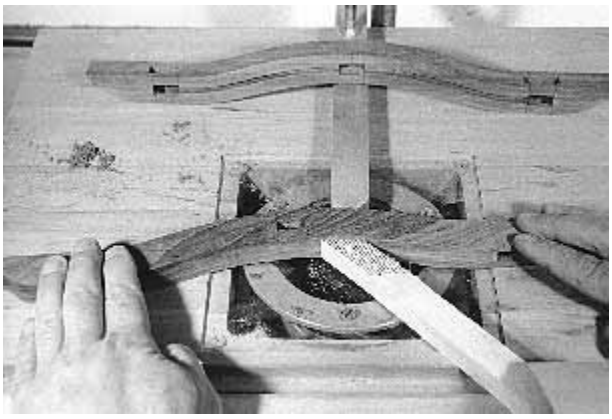

Photo 8- To rout a curved groove along a curved piece, you can't use a straight fence. This point location fence (upper portion of photo) keeps the bit a uniform distance from one of the two curved edges. The featherboard (lower portion) keeps the part against the fence.

For router tables, click here.
For routers, click here.
For router bits, click here.

Make 14 slats at 1/4 x 11/16 x 8-13/16". Rip them out slightly wider than 11/16, then use a block plane to evenly reduce their widths until the seven slats fit on either side of the top mid rail and the top corner rails. Use the block plane to smooth the faces of the slats, too.

Assemble the front and rear frames. At the drill press, bore 1/8" holes through the bottom rails and post tenons as shown, and push 1/8" dowels into these holes. Trim the dowels flush with the rail surface with a chisel. You don't need glue in these joints so long as the dowels are snug.

Next assemble the whole frame by installing all the mid rails and the slats, and pulling it all together with clamps. Custom make wedges to fit the other mortises as shown. When making small, thin parts like this on a table saw, always rip out long pieces and then cut them short later. Or, cut the parts on a band saw, which is safer to use for small parts. Adjust the thickness of a small, short wedge with a block plane.

Entertainment Cabinet

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Photo 9- Hand shape the wedges with chisels, and leave the facets from the chisel cuts on the wedges for a hand-cut look.

For chisels, click here.

Make drawers for the cabinet using a simple dovetailing jig, or use an interlocking joint as shown in the article on this site titled Floor Standing Router Table. Note that you must very carefully cut off the ends of the curved top drawer face and rear so that the curve of the drawer matches the curve of the rail. For the rear drawer piece, trace the curve of the rail onto the wood and cut it out on the band or scroll saw.

**Rockler Bench Top Router Table**
Mount your router into this economical unit.

Photo 10- Use a straight flute bit at the router table to cut a groove in the sides of the drawers so that they will slide upon the frame rails. Carefully locate the grooves to ensure proper alignment of the

**Rockler Router Table Package**
Includes table top with quality fittings, adjustable fence AND Porter Cable 690 Router. Good deal.

drawers.

Cut grooves in the sides of the drawers as in photo 9. Locate these grooves very carefully, since they not only hold each drawer in place, but establish the clearance between each drawer. Stop the grooves at 3/4" from the front of the drawer, and chisel the end of the groove square. Begin by fitting the bottom drawer in place, measuring from the bottom rail to the mid rail that holds the drawer. Fit the bottom drawer, then measure for the next from the top edge of the bottom drawer. Use a block plane to reduce edges where necessary to keep clearances uniform.

Round all sharp corners with fine sandpaper, and give the entire box a couple of coats of wipe-on oil. Applying a film finish on a box like this with numerous tenons and wedges would not look very good because the finish would tend to pool in all those little corners. You want all those corners exposed, so people can see the work you put into it.

Humidor

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## Resources for building an Oriental Box of Drawers